What is claimed is:

1. A system for detecting the presence of a human being within a space of interest, the system comprising:

a plurality of pressure transducers each for producing an associated transducer signal representative of a pressure wave impinging thereon generated by a human being within the space of interest;

a database for storing first data corresponding to first recorded pressure signals that represent the presence of a human being and second data corresponding to second recorded pressure signals that represent the absence of a human being; and

a processor for calculating an algorithm corresponding to a human being presence estimator for each of the transducer signals, a comparison of said human being presence estimator to a trained threshold, and a combination of the detection results from all the said plurality of pressure transducers to determine the presence of a human being in the space of interest.

2. A system for detecting the occupancy of a vehicle seat by a human being, the vehicle seat being of the type having a seat frame, the system comprising:

a plurality of pressure transducers attached to the seat frame at respective positions thereon each for producing a pressure signal responsive to a pressure applied to the seat frame;

a database for storing first data corresponding to first recorded pressure signals that represent the presence of a human being sitting on the vehicle seat and second data corresponding to second recorded pressure signals that represent the absence of a human being;

a processor for calculating an algorithm corresponding to a non-linear short-term frequency-selective energy distribution of the pressure signals from the pressure transducers over time, and comparing the energies of the pressure signals energy to the energies represented in the first and second data stored in the database, and

an arrangement for determining a threshold of similarity for distinguishing a human-being-occupied vehicle seat from an empty vehicle seat.

3. The system of claim 2, wherein one of said pressure transducers is a load cell.

4. The system of claim 2, wherein one of said pressure transducers is an accelerometer.

5. The system of claim 2, wherein the second data corresponding to second recorded pressure signals that represent the absence of a human being correspond to and empty vehicle seat.

6. A system for detecting the presence of a human subject in a predetermined space of interest, comprising:

a plurality of pressure transducers placed in predetermined spatial relationship to the space of interest,

a database containing recorded pressure signals that correspond to a human subject being present and empty space,

a processor for calculating an algorithm corresponding to the non-linear short-term frequency-selective energy distribution of the measured signals from the pressure transducers over time, and for comparing the measured signal's energy to those in the database, and

an arrangement for determining the threshold of similarity for distinguishing the human-being-occupied space from the empty space.

7. The system of claim 6, wherein one of said plurality of pressure transducers is a load cell.

8. The system of claim 6, wherein one of said plurality of pressure transducers is an accelerometer.

9. The system of claim 6, wherein one of said plurality of pressure transducers is a geophone.

10. The system of claim 6, wherein one of said plurality of pressure transducers is a microwave radiometer.

11. The system of claim 6, wherein one of said plurality of pressure transducers is disposed in the vicinity of the predetermined space of interest.

12. The system of claim 6, wherein one of said plurality of pressure transducers is disposed within the predetermined space of interest.

13. A system for detecting the presence of a human subject trapped under rubble or behind barriers or within a burning building, the system comprising:

a plurality of pressure transducers placed in predetermined relation to the rubble or barrier, the pressure transducers being appropriately oriented,

a database containing recorded pressure signals that correspond to a human being present and to empty space,

a processor for calculating an algorithm corresponding to the non-linear short-term frequency-selective energy distribution of the measured signals from the pressure transducers over time, and for comparing the measured signal's energy to those in the database, and

an arrangement for determining the threshold of similarity for distinguishing the human-being-occupied space from the empty space.

14. The system of claim 13, wherein one of said plurality of pressure transducers is a geophone.

15. The system of claim 13, wherein one of said plurality of pressure transducers is a microwave radiometer.

16. A system for determining whether a human occupant in a vehicle seat is in a fatigued condition or in an alert condition, the system comprising:

a plurality of pressure transducers for recording the human heartbeat from respective positions;

a database containing data corresponding yo recorded pressure signals that correspond to alert and fatigued human conditions;

an algorithm for calculating a non-linear short-term frequency-selective energy distribution of the recorded signals from the pressure transducers over time, and for determining the instantaneous heartbeat of the human occupant; and

an arrangement for determining a threshold of similarity for distinguishing between alert and fatigued conditions of the human occupant.

17. The system of claim 16, wherein one of said plurality of pressure transducers is a load cell.

18. The system of claim 16, wherein one of said plurality of pressure transducers is an accelerometer.

19. A system for determining whether a human occupant in a vehicle seat is in position or out of position, the system comprising:

a database containing recorded pressure signals that correspond to vehicle occupants that are normally seated and to vehicle occupants that are leaning,

a linear subspace representation of the database that reduces the dimensionality of each signal from more than 100 to approximately 1 using the Fisherbasis methodology;

a representation of any newly measured pressure signal using the Fisherbasis methodology; and

a classification of the newly measured pressure signal into an in position class or an out of position class, upon determining that the vehicle seat is occupied by a human being.

20. The system of claim 19, wherein the in position condition corresponds to the human occupant being normally seated, and the out of position condition corresponds to the human occupant being in a leaning position.